ABSTRACT OF THE DISCLOSURE

A semiconductor device has: a semiconductor substrate having a pair of current input/output regions via which current flows; an insulating film formed on the semiconductor substrate and having a gate electrode opening; and a mushroom gate electrode structure formed on the semiconductor substrate via the gate electrode opening, the mushroom gate electrode structure having a stem and a head formed on the stem, the stem having a limited size on the semiconductor substrate along a current direction and having a forward taper shape upwardly and monotonically increasing the size along the current direction, the head having a size expanded stepwise along the current direction, and the stem contacting the semiconductor substrate in the gate electrode opening and riding the insulating film near at a position of at least one of opposite ends of the stem along the current direction.